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ABSTRACT

Noting that families from different socioeconomic status groups (SES) showed differences in their literacy-related practices, this study examined the importance of considering home literacy activities and parental beliefs on early literacy skills as a potential mediator of SES on early reading. Data were obtained from the base year dataset of the Early Childhood Longitudinal Study Kindergarten class of 1998-99, a nationally representative cohort of children, with a total sample size of 14,741 from those kindergartners with valid data on all variables in the model. Structural equation modeling revealed that a number of factors within parental, parenting, and socioeconomic contexts came together to influence children's early reading. While SES influenced kindergarten reading skills indirectly through family literacy activities, which then influenced reading skills and children's approaches to learning, SES still had a strong direct impact on reading skills. Parenting beliefs did not mediate the relation between SES and home literacy activities. These findings demonstrate that there were multiple pathways through which SES influenced children's reading skills and there is still need to search for mediators that can explain SES differences in home literacy activities that lead to inequalities in later reading achievement. (Contains 34 references.) (Author/KB)

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Direct and Indirect Influences of SES on Home Literacy Activities and Kindergarten Reading Skills: Evidence from Early Childhood Longitudinal Studies

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University of Michigan- Ann Arbor

Paper presented at the National Association for the Education of Young Children 2002 Annual Conference

Abstract

This study examined the importance of considering home literacy activities and parental beliefs on early literacy skills as a potential mediator of socioeconomic status (SES) on early reading. Since most of previous studies failed to incorporate several levels of family variables including family SES, parenting beliefs and parenting practices of home literacy activities simultaneously, this paper attempted to examine dynamic interactions among those influences and the paths through which contexts impact early reading development. Structural equation modeling revealed that a number of factors within parental, parenting, and socioeconomic contexts come together to influence children's early reading. While SES influenced kindergarten reading skills indirectly through family literacy activities, which then influenced reading skills and children's approaches to learning, SES still had a strong direct impact on reading skills. Parenting beliefs did not mediate the relation between SES and home literacy activities. These findings demonstrate that there were multiple pathways through which SES influenced children's reading skills and there are still needs to search for mediators that can explain SES differences in home literacy activities, which will lead inequalities in later reading achievement.

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Seung-Hee Claire Son Katherine Strasser

University of Michigan- Ann Arbor

Paper presented at the National Association
for the Education of Young Children Annual Conference

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Direct and Indirect Influences of SES on Home Literacy and Kindergarten Reading Skills: Evidence from Early Childhood Longitudinal Study

Socioeconomic Differences in Early Reading Skills

The finding, nearly twenty years ago, that families from different socioeconomic status showed differences in their literacy-related practices (e.g. Heath, 1983) opened the door to the hypothesis that these differences could explain the inequalities in reading achievement observed across different social classes. In an effort to find the characteristics that could explain the known association between socio-demographic variables and reading achievement, family variables that were assumed to be related to literacy began to be extensively studied. Since then, empirical studies have found relations between a number of home and family characteristics and reading-related measures, both emergent and conventional in early childhood. Among these we can find variables such as the amount of literacy materials present in the home (Neuman, 1999), the frequency of storybook reading interactions (Senechal, Lefevre, Thomas & Daley, 1998; Leseman & DeJong, 1998) and their quality (e.g. Elliot & Hewison, 1994; Pellegrini, Galda & Shockley, 1995), the nature of language used at home (Pellegrini, Galda & Shockley, 1995; DeTemple & Tabors, 1996), and explicit reading and writing instruction (Goldenberg, Reese, & Gallimore, 1998, Elliot and Hewisson, 1994, Senechal, LeFevre, Thomas & Daley, 1998)

Probably the most studied of home activities is parent-child shared storybook reading. There are several aspects of story-book reading that have been studied with respect to their influence in literacy acquisition, but the sheer frequency of this activity is by far the most studied aspect. Frequency of shared reading has been reported to have effects on oral language development (Bus, van Ijzendoorn & Pellegrini, 1995, Senechal, LeFevre, Thomas & Daley, 1998, Whitehurst, Arnold, Epstein, Angell, Smith and Fischel, 1994) and measures of reading skills (Bus, van Ijzendoorn & Pellegrini, 1995, Leseman and DeJong, 1998, Overett and Donald, 1998). Regarding storybook reading style, most researchers argue that the most effective style is characterized by interactions that elaborate on the content of the book, being

more demanding and decontextualized (Allison & Watson, 1994, Heath, 1982, Overett and Donald, 1998, Pellegrini, Perlmutter, Galda and Brody, 1990).

Some researchers have focused on whether parents engage in any explicit reading and writing instruction, and the potential effect that such practices might have for the child (Goldenberg, Reese, & Gallimore, 1998, Elliot and Hewisson, 1994, Senechal, LeFevre, Thomas & Daley, 1998). Examples of activities studied in this approach are direct reading instruction during storybook reading, encouraging the identification and sounding of letters, helping with homework, and helping with the coding of words during writing. A recent study by Sénéchal & LeFevre (2002) reported that storybook reading and explicit instruction are different types of home literacy activities which have specificity in its influence: storybook reading influenced vocabulary and listening comprehension while explicit teaching influenced early literacy skills.

Although these studies have examined specific influence of home literacy activities on young children's reading skills, they fail to incorporate a more macro picture of children's literacy development: they did not tell us how and why home literacy activities are different across families and how this influences child development. In other words, the perspective from the original research on SES influences was not incorporated in these studies. In addition, they did not go beyond including a list of family predictors of early reading, thus, failed to explain the mechanisms that produce differences in family activities and early reading. Considering that there has been a large volume of research interested in socioeconomic differences in home activities, we may converge these two flows of research into one that can look into the influence of home activities within a broad picture of social and economic family condition. At the same time, in the incorporated model, we can examine the mechanisms through which SES and home activities influence early reading skills.

Searching for Mediators: Beliefs about Readiness

In spite of the large amount of research that focuses on home influences on reading skills, there is not much clarity on the issue of <u>why</u> families from different SES engage in different literacy behaviors. The answer to this question could have important consequences

on the design of policies based on family interventions. One of the answers to this question has to do with beliefs about education and reading. It might be the case that families engage in different practices because they have different views and beliefs about the value and function of education at home. If this is the case, early intervention based mostly on parental beliefs and values will attempt to modify families' views through parent education and expect their behaviors to change as a consequence, instead of just attempting to modify family behaviors directly.

Many researchers have advanced the hypothesis that what parents do with literacy at home is primarily related to their views about the value and function of literacy, as well as their views about child development and education. Parents' beliefs about literacy and education have been shown to vary with socioeconomic status (Sonnenschein, Baker & Cerro, 1992), ethnic group (Stevenson, Chen & Uttal, 1990; Hyson & DeCspikes, 1993, cited in Sonnenschein, Brody & Munsterman, 1996) and educational level (Fitzgerald, Spiegel & Cunningham, 1991; Stipek, Milburn, Clements and Daniels, 1992).

Previous research has also shown that different parents endorse different views of what activities are beneficial for literacy development and how parents can foster the development. Fitzgerald, Spiegel & Cunningham (1991), for example, showed a relation between parents' literacy level and their beliefs about what is important for children to develop literacy. They found that low-literacy parents placed equal value on instructional or skill-oriented materials and activities (i.e., alphabet blocks, flashcards, watching educational TV and playing School) and natural or nurturing artifacts and events (i.e., paper, pens, magazines, reading to the child), while high-literacy parents did not show a high value for instructional materials, but only for natural ones. Similarly, low-literacy parents manifested less preoccupation than high literacy parents for adult role modeling of literacy behaviors, and they had fewer ideas than high-literacy parents about why some children do well in school and about what parents can do to help them. Stipek, Milburn, Clements and Daniels (1992) also found that the educational level of parents was related to their beliefs about what type of education is appropriate for young children, with less educated parents supporting <u>didactic</u> approaches versus parents with higher educational levels supporting <u>child-centered</u> approaches.

Kindergarten entry is a period when some parents may modify their expectations and beliefs about their child's learning. In the field of early childhood education, this period has been studied extensively under the name of readiness. Readiness skills mean specific skills needed before entering school to succeed in kindergarten and schooling. However, what readiness skills are is defined differently across several groups of people from different cultures (Grague, 1992). Parents might also have their own readiness concepts about what children should know and be able to do at school entry. Parent's readiness beliefs influenced the activities they engage in with their children and the programs and experiences they arrange for the children (Grague, 1992). According to one survey, parents of a majority of preschoolers believed that knowing the letters of the alphabet, being able to count to 20 or more, and using pencils and paint brushes are very essential or important for a child before entering kindergarten (National Center for Education Statistics, 1995). Interestingly, theses beliefs on the relative importance of skills varied across parents with different levels of education. Especially, there were large differences in the percentages of parents with higher and lower levels of education who believed that specific school-related skills and behaviors are very important to a child's readiness for kindergarten. That is, parents with lower education reported more emphasis on school-related skills -- e.g. counting, alphabet letters, using pencil etc.-- than parents with more formal education.

The differences in parental beliefs about skills in their young children seem to influence child school performance (Johnson & Martin, 1985; Okagaki & Sternberg, 1993). Considering several reports about the influence of parental beliefs on home environment and activities, children's achievement tends to be mediated by home activities influenced by parental beliefs (Grague, 1992; Johnson & Martin, 1985; Sonnenschein, Baker, Serpell, & Schimidt, 2000).

As seen above, parents might have different beliefs according to their socioeconomic status, education level, or ethnic origins. Parents with different SES, in addition, provide different type and frequency of home activities. In this case, SES may have an indirect influence on child reading achievement through parental beliefs and home activities. For example, Goldenberg, Reese, and Gallimore (1992) conducted an intervention based on sending books to the homes of low SES Latino families, but did not find the expected positive effect on children's reading achievement. The researchers later found that families had not

conducted the expected activities with the books –that is, reading and sharing them with their children- but had used them as direct teaching materials to teach the letters and other explicit literacy concepts they considered important. Considering the previous research reporting SES as direct impact on child development (e.g. Duncan, Yeung, Brooks-Gunn, & Smith, 1998), more studies are needed to examine the direct and indirect effects of SES on child literacy development.

In this paper, we examined the factors that influence early reading skills upon entry to kindergarten and the relations among the factors. Especially, we looked into the influence of SES and possible mediators for its influence. We were interested in the extent to which home activities and SES impact early literacy skills and the mechanisms through which they exert their influence. We included in the model some mediators that might be used as a mechanism of SES influence, including child characteristics and parental beliefs. Using Structural Equation Modeling, we were able to test direct and indirect effects of the SES on child reading skills, which can shed light on some of the mechanisms of influence of SES.

The Model

We were interested in testing a model of the relations between SES and reading that includes the influence of the possible mediators including home-literacy activities and parental beliefs. Parental readiness beliefs were included as two separate factors of academic and self-regulation skills since previous studies implied the influence of SES varied as a function of types of skills. We also included a direct effect of SES on literacy activities to account for other possible influences not tested in the model. The model also included, in addition to literacy-centered activities, a factor for other family activities, since we would like to see whether parental beliefs have a different effect on home literacy activities and in other kinds of family activities such as playing games, singing songs and playing sports. By adding this "other activities" factor we could control for the possibility that the influence of literacy activities on reading is not given by anything specific to literacy activities, but rather by a general factor related to how much time the family spends together. Finally, we also controlled for children's

motivation towards learning, since it has been shown that this factor is a good predictor of general learning and achievement.

Here, the mediators were not just included as a control, but also examined with regards to their dynamic relations with one another. We assume that in addition to having a direct effect, SES would indirectly influence early reading skills through parental beliefs that impact family activities, which then influence early reading skills through child's approaches to learning. Thus, the current model is the one that can examine the unique influence of SES controlling other possible predictors and, at the same time, dynamic relation among the predictors, which is shown in figure 1.

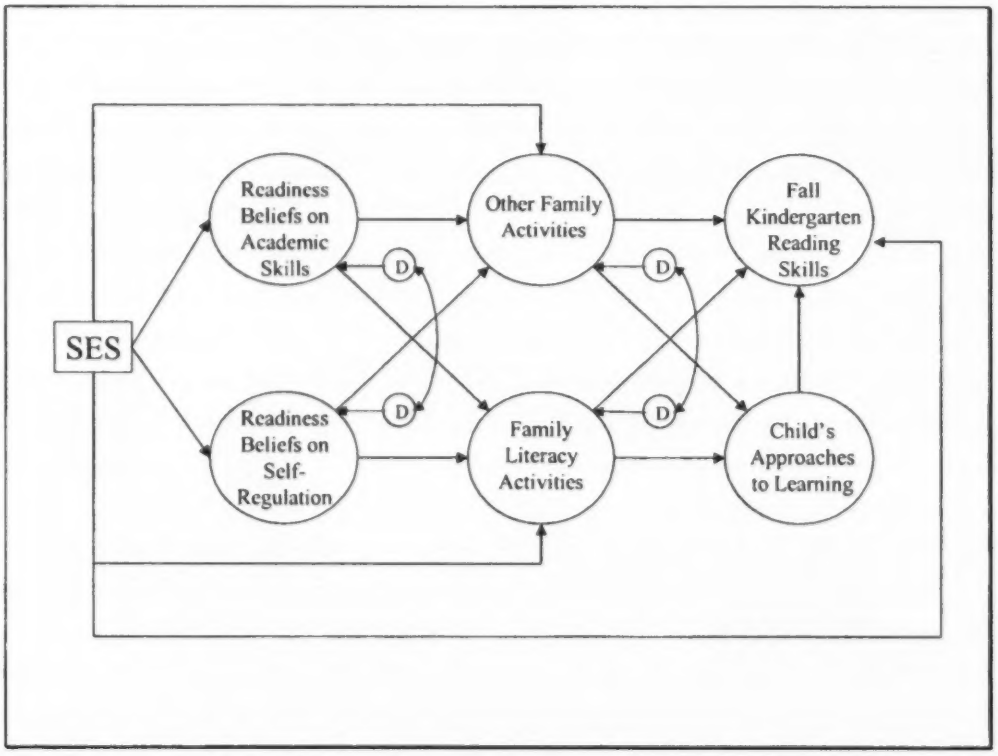

Figure 1: Hypothesized Model of Mediators between SES, Parental Beliefs, Literacy Activities and Reading

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Method

Sample

We used the base year dataset of the Early Childhood Longitudinal Study Kindergarten cohort. The Early Childhood Longitudinal Study – Kindergarten Class of 1998-99 (ECLS) is a study that focuses on children's early school experiences beginning with kindergarten (NCES, 2001). The ECLS-K is following a nationally representative cohort of children from kindergarten through fifth grade totaling 21,260 children. We used the data from the beginning of kindergarten (administered in the fall semester of kindergarten), since we hope to examine home influences on child literacy with minimum school effects. Only children who were first-time kindergarteners and who had valid data on all the variables in the model were included in the study. The final sample size (listwise) was 14,741.

Table 1: Demographic characteristics of the study sample (N=14,741)

	N	Minimum	Maximum	Mean	Std. Deviation
Age (months)	14741	54.00	79.00	68.27	4.06
Family income	14739	1.00	999999.00	55491.54	54115.99

	Frequency	Percentage
Gender	14741	
Female	7241	49.1
Male	7499	50.9
Home language	14735	
English	13891	94.3
Other than English	844	5.7
Ethnicity	14719	
White	9407	63.8
Asian	362	2.5
Hispanic	1995	13.5
Black	2241	15.2
Other race	712	4.9
Ever in center-based care	14725	
Yes	11577	78.6
No	3148	21.4

The data was weighted using the fall parent-child weight provided in the ECLS-K, which was then normalized to maintain the sample size. The use of weights was necessary due to intentional over-sampling of some minority children. The demographic characteristics of the

study sample were examined using the weighted data (see Table.1). The average age of the sample reaches 68 months and their mean family income is around 54,000 dollars. 50.9% of children are male and 63.8% are Caucasian-American. Among the sample, 5.7% used a language other than English at home, and 78.6% of the children had experienced a center-based childcare.

Variables

The variables included in the original model were the following:

SOCIO-ECONOMIC STATUS

This is a composite variable formed by five items of mothers' and fathers' educational level, mother's and fathers 'occupational prestige, and family income. In this study we included the SES variable provided in the ECLS database as an observed variable, instead of using the factor as a formative factor, since we were not able to replicate the exact method used by the ECLS team to combine the variables. This probably is also why, when we tried to use these variables to construct an SES formative factor, our models did not converge.

According to the manual (NCES, 2001), the ECLS team recoded the parent's occupation to reflect the average of the 1989 General Social Survey (GSS) prestige score of the occupation (Nanao & Treas, 1992). Any missing variables of all components in the SES were imputed using a hot deck imputation where the value reported by a respondent for a particular item is donated to a similar person who failed to respond to that question. After the variables were imputed, SES was computed as a mean of a standardized score of each variable.

PARENTAL READINESS BELIEFS ABOUT ACADEMIC SKILLS

This latent factor included two items regarding parents' beliefs about the degree to which academic skills are important and should be mastered before entering kindergarten. The two items asked about the importance of counting and knowing the letters of the alphabet. Parents were asked to evaluate the level of importance of each item along the continuum from essential to not important. We interpret this factor as representing an academic-oriented approach of parenting; the higher the score in this factor, the more the parent pushes children to master and to be ready for school in certain academic skills and knowledge, which is

purported to be directly related to learning. Inter-item reliability of the two indicators was .6404.

Parental Readiness Beliefs about Self-regulation

This factor included three items regarding parents' beliefs about the degree to which social or self-regulation skills are important and should be mastered before entering kindergarten. Parents were also asked to evaluate the level of importance of each item along the continuum from essential to not important. The items included in the factor asked about the perceived importance of sharing, being able to sit still and being able to communicate well. Alpha coefficient of reliability among the three indicators was 0.5320.

Family Literacy Activities

This factor included three items that measure the frequency with which parents engage in different literacy activities with the child, especially book activities. Originally, there were 10 items about home activity in the ECLS-K database. We expected that these items could be factored into one literacy and one non-literacy factors. This expectation was assured by factor analysis. Three items about book activity were loaded on one factor and other activity items were loaded on the other factor. Using the first three items, we created a factor of family literacy activities. Actual items in this factor are: the frequency with which parent reads to the child, the frequency with which the child reads picture books, and the frequency with which the child reads books outside school. Parents' responses were coded as a 4-point scale: not at all, once or twice a week , three to six times a week or everyday. Reliability of the items was 0.6176.

Other Family Activities

The second factor of home activities included items that measure the frequency with which the family engages in non-literacy activities together, such as play games, sing songs, build things or play sports. The items were collapsed into three indicators (Act1, Act2 and Act3). Reliability of the three grouped indicators was 0.6625.

CHILD'S APPROACHES TO LEARNING

Child's approaches towards learning or early motivation were measured with one single variable from the ECLS-K database, *P1LEARN* (approaches to learning). This variable represents a composite of parents' ratings in six items about the degree to which the child shows certain behaviors that indicate his or her disposition towards learning. The six items included in the scale were about how often a child shows eagerness to learn, interest in a variety of things, creativity, persistence, concentration, and responsibility. This motivation scale is originally a part of a social rating scale by parents about self-control, social interaction, impulsive/overactive, and sad/lonely scales. The split-half reliability of this motivation factor, as reported by the ECLS-K manual (NCES, 2001), was approximately 0.68, which was entered in the model to calculate the error variance of a latent variable (.0716) to consider the reliability of the indicator measure.

LITERACY SCORES AT THE BEGINNING OF KINDERGARTEN

Literacy skills at the beginning of kindergarten were assessed using Direct Cognitive Assessments tools of ECLS-K developed by NCES with five sub-scales that measured the following basic skills: identifying upper- and lower-case letters of the alphabet by names, associating letters with sounds at the beginning of words, associating letters with sounds at the end of words, recognizing common words by sight, and reading word in context.
We used IRT-based composite scores of reading of fall kindergarten as outcome variable. IRT scores place each child in a continuous ability scale using the pattern of right, wrong, and omitted responses to the items actually administered in a test (Hambleton, 1991). They were better indicators of overall cognitive skills without a ceiling problem and made it possible to compare the scores taken in different test items. Using the IRT-composite score as one indicator, we constructed a latent factor of kindergarten reading skills. In making a latent factor, we fixed the error variance to 7.0346, using the reliability of the scale provided by ECLS (0.9).

Results

Measurement Model

As a first step, we tested the measurement model to make sure that the way in which we had constructed the factors was appropriate and that our measurement of the factors was

reliable. The measurement model was tested by replacing all the paths in the model with correlations, thereby turning all factors into exogenous factors. The measurement model appeared to have a good fit ($X2_{56,14171} = 2085.298$; NFI = 0.94; NNFI =0.918; CFI = 0.941; RMSEA =0.050). These results made us confident that we had appropriately measured our factors, and so we were able to proceed towards testing our model.

Confirmatory Analysis: SEM

We tested the model shown in figure 1 using Structural Equation Modeling (EQS Program; Bentler & Wu, 1993). The output from this confirmatory analysis is represented at figure 2. All indices of goodness of fit were at the level of good fit ($X^2_{64,14171} = 2843.896$; NFI = 0.926; NNFI =0.897; CFI = 0.928; RMSEA =0.054). All paths except the one from readiness beliefs on academic skills to other family activities were significant, but rather low. The higher paths were the direct paths that influence the reading outcome. Since we had a quite large sample size, almost every path was significant, which made us careful in interpreting results.

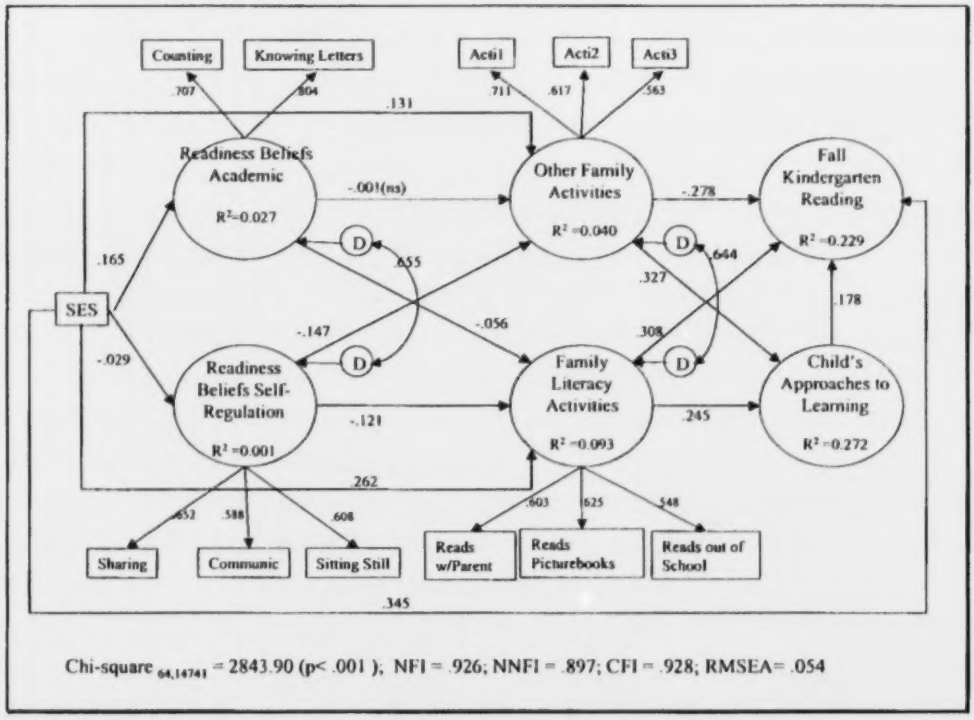

Figure 2: SEM results with coefficients and goodness of fit indicators

All paths shown are significant with p<0.05, except the ones marked (ns)

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Overall, we found that SES has a significant influence on fall kindergarten reading skills directly and indirectly. Parents with higher SES tended to put higher degree of beliefs on the importance of readiness for academic skills but the beliefs did not have a significant relation with the frequency of non-literacy family activities. Although the effect of academic beliefs on literacy activities was significant, it was very low. Parents with higher degree of beliefs on the importance of self-regulation tended to provide less family activities, which was quite surprising considering the high correlation between the two types of readiness beliefs. According to our original predictions, parental readiness beliefs would have a significant effect on family activities. However, the effects of SES on beliefs factors and those of beliefs to activities factors were very low (although significant) so we did not feel confident that they can be interpreted in the way we originally proposed in our model as intermediate variables that can explain the influence of SES on home literacy. The results suggest that these particular readiness beliefs of parents were not automatically linked to SES or parenting behaviors.

On the other hand, family activities have a significant influence on reading skills. While there was a high correlation between the frequency of home literacy activities and other family activities, home literacy activities had a positive influence on reading skills and other family activities had a negative influence. This might indicate that families that spend more time on other kinds of activities take time away from literacy activities. However, other family activities still tended to positively impact early reading skills through child's approaches to learning as family literacy activities did. Although other activities did not have a direct positive influence on reading, they still impacted child's general attitude towards learning, which in turns had a positive effect on early reading skills. The case for the family literacy activities factor was different, however, since this factor had both a direct positive effect on reading, and an indirect effect through the child's approach towards learning.

Family activities variables were found to be influenced by SES. The higher the parents' SES was, the more frequently did they engage in family activities. And, their frequent activities were linked to child's reading skills. Thus, these results suggest that the family literacy activities, which significantly influenced early reading, differed across SES groups.

In spite of all these effects, in this study, SES continued to have the most profound effects on reading, over and above all the parenting beliefs and behavior variables. The coefficient of the direct path from SES to early reading was .33 with all child and family activities variables controlled for, which is greater than the effects of family literacy activities on reading, showing that we were not successful in modeling the influence of SES on early reading skills. It might be the case that there might be mediators of SES other than those represented in previous studies such as family activities.

Discussion

The SEM model presented here shows interesting findings about the influence of SES on early reading skills. It only partly supported our hypotheses about the relations among SES, home literacy activities and reading skills. In our confirmatory analysis, the two parental beliefs variables that we suggested had an influence on home literacy were significant, but the actual coefficients were very small. Thus, they could not explain the relation between socio-economic status and home literacy activities.

On the other hand, the direct influence of SES on home literacy activities continues to be very strong, indicating that we failed to include any mediators other than parental beliefs that could explain this relation. Examples of such factors that should be studied in the future include access to literacy resources or parental financial stresses. Access to different amount of materials provides a reasonable bridge between sociocultural factors and home activities, since there is considerable variation in the number of materials that families and communities from different sociocultural backgrounds have access to (Neuman, 1999, Neuman & Celano, 2001). In a survey of literacy materials accessible to people living in three neighborhoods with different socioeconomic status, researchers found that in the neighborhood with the lowest SES there were only four stores when books could be found, and all of these offered only coloring books, with an average of one coloring book per 353 children. In contrast, in the middle-high SES neighborhood, researchers found and average of up to 12 storybooks per child available in stores in the neighborhood (Neuman & Celano, 2001). These differences in

access to literacy materials could be more important than family beliefs when determining parents' involvement in lityeracy activities and chidlren's reading achievement.

Not only the number, but also the type of materials present in different groups has been shown to vary. Heath (1983), for example, found that middle class mothers were more familiar with traditional narrative texts such as storybooks, while low SES mothers were more familiar with less traditional narrative texts, such as newspapers or cartoons and expository texts, such as advertisements. The finding by Pellegrini et al. (1990) that different genres elicit different interactions in low SES mothers supports the hypothesis that the type of materials can be a mediator between SES and the quality of book reading.

SES may influence family activities not directly through economic factors such as availability of resources, but through psychological factors due to economic problems. There have not been many studies about the effects that parental strain might have on the frequency and quality of literacy interactions in the home, but it is reasonable to expect that the stress created by poverty conditions could have an effect in parents' involvement in their children's education. It may be possible that parents with more demands due to economic strain may be less inclined to spend quality literacy time with their children. One example of this is the hypothesis that the daily stresses imposed on low SES mothers by economic deprivations might hinder their ability to focus on the affective relationship with their infants (Schaffer, 1996). This, in combination with some findings related to attachment security and frequency of storybook reading, could provide another possible connection of socioeconomic variables and literacy development. Bus and van Ijzendoorn studied mother-child attachment as a potential source of variation in the frequency and quality of storybook reading, and found that mothers of insecurely attached children reported that their children showed less interest in written language than securely attached children (Bus & van IJzendoorn, 1995), and that attachment security was a strong predictor of the frequency with which the mother reported that she read with her child (Bus & van IJzendoorn, 1995).

The literacy activities factor was shown to have a direct and positive influence on reading skills as well as an indirect influence through the child's attitude towards learning. On the other hand, other family activities also had an indirect positive effect on reading, through

their positive effect on the child's motivation to learn, but their direct effect on reading skills was negative here, as opposed to that of literacy activities. Children who engaged in a great deal of family activities, literacy-related or not- tended to have an increased motivation towards learning, which in turn had a positive effect on their reading development. However, over and above this effect, there appears to be a certain specificity to the kinds of learning experiences that each kind of activity provides: this study suggests that reading skills at early kindergarten year can be influenced much more by family literacy activities such as book reading than by other enjoyable activities. However, it might be the case that other family activities might influence other aspect of kindergartners' academic skills. That means that specific family activities can help children develop specific skills. In addition, the negative relation could result from the measure of kindergarten reading skills. Here, most of children could identify letter-word basic decoding but couldn't finish the part of word in context or comprehension test, so the measure here represented basic skills mostly. Other family activities not directly related to reading may provide opportunities for children to develop content knowledge, which can help them comprehend stories in general but not basic letter-word skills. Thus, these activities did not positively influence reading skills here, but might influence higher-level reading skills incorporating a comprehension measure.

The inclusion of the specific variables that were used to estimate SES could be a valuable addition to future studies. It is reasonable to believe that income level and parental education will influence home literacy activities in different ways; if we included each one of these separately, instead as together in the same factor, we might find indirect effects through mediators. For example, parental education might influence home literacy through beliefs while income could have an effect through access and parental financial strain.

The biggest limitation of this study is that the model was not based on longitudinal measurements. Rather, every variable was assessed at the fall kindergarten, which makes the causal interpretation of the current results tentative at best. Another limitation was posed by the operationalization of our theoretical constructs. Since we had to depend on data collected by others, we had little control over the kinds of questions asked of parents. This obviously limited our ability to measure exactly what we would have liked to measure. For example, the beliefs construct only measured the degree to which parents endorse a "readiness" view of

development, where it is important that children master certain specific skills before entering school in order to benefit from school instruction. Although research has shown that this is an important determinant of the practices that parents engage in, it is not everything there is as to parental beliefs about education. It does not provide any insights about how much parents value literacy, what they believe it is useful for, and how they believe they can foster it in their children. Thus, it is hard for us to interpret the positive relation between these beliefs and home literacy activities in the absence of the other information.

However, we do believe that these findings provide some insights into the direct and indirect effects of SES on home literacy activities and reading. Most studies that compared the kinds of beliefs about reading held by parents from different SES have been qualitative in nature, and maybe researchers have been too quick to attribute essentially different beliefs to parents from different SES, preferring cultural explanations to explanations based on other possible mediators such as access to resources. This study, within the limitations already mentioned, emphasizes the need to look more carefully at the assumption that beliefs about literacy and education vary fundamentally across groups, as well as the need to consider more practical aspects such as the way in which SES influences the access that families have to different literacy resources. And, above all, the study shows the need for more research on the potential mediators of the known SES influence on literacy, beyond other family beliefs and activities.

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